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## **Retail Choice Experiments: Comparing Early-Adopter Experience**

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## Abstract

This paper reviews the experience with retail choice of non-residential electricity customers during the period from early 1998 through the first few months of 2000. Key findings include: (1) customers in California received a significantly smaller discount from utility tariffs than customers in other competitive markets; (2) this sample of large commercial/industrial customers believed they were benefiting significantly more from commodity savings from contracts with retail electricity service providers (RESP) than from value-added services; and, (3) market rules appear to be critical to customer experiences with retail competition, yet the relationship between market rules and market development is inadequately understood.

Keywords: Retail choice, electricity restructuring, value-added services

## INTRODUCTION

Beginning in early 1998 through the spring of 2000, electricity customers in a number of states had the opportunity to shop for electricity-related services in markets that were, to all appearances, functioning normally.<sup>1</sup> Although the pace of electricity restructuring<sup>2</sup> nationally was slower than many originally predicted, electricity service customers were experiencing retail choice around the country in new and unprecedented ways. At the time this research was conducted, full retail access in four states – Massachusetts, Rhode Island, California and Pennsylvania – had been available to non-residential customers for over a year. Other states, such as New Jersey, New York, Michigan and Illinois were opening their markets to competition in phases or had opened to full retail competition more recently.

The competitive electricity market in California opened on March 31, 1998 amid a fair degree of fanfare and with great optimism. Governor Wilson stated that the restructuring law provided “a framework for lower generation costs, and for the first time, the ability for customers of the state’s investor-owned utilities to choose their electricity provider (CEC 1997).” At the time this research was being conducted, the popular press was laudatory in their praise of electricity restructuring. An article from the front page of the business section of the San Francisco Chronicle claimed that “On the first anniversary (of the restructuring), the unabashed goals of the bold move – lower prices for all, greater reliability and robust technical innovation – are within reach.”<sup>3</sup>

By contrast, the attempt at electricity restructuring in California is now universally acknowledged to have failed miserably. As a result of this failure, along with a series of other developments -- the bankruptcies of Enron and PG&E, the near bankruptcy of Southern California Edison, the crash of stock prices throughout the sector and investigations into market manipulation in Pennsylvania – the whole concept has become subject to significant political reservations and opposition. But what should not be ignored in the backlash resulting from these developments is the experience of competitive markets during the period from early 1998 to the spring of 2000, during which time competitive markets seemed to be reasonably well-functioning.

This is not to say that restructuring was a success during that period. Rather, it means that during that time there was a reasonably active and competitive retail market in several states. Customers had choices among a variety of suppliers offering services at reasonable prices. What it may or may not mean, is that restructuring was delivering on the great promises made about the benefits of competitive markets in general or promises made about the benefits of competition in electricity markets in particular (cf. Cato 1995). Of course, two years of competitive activity do not a mature competitive market make. On the other hand, one might reasonably expect to see trends beginning to develop in the direction of expectations, if such trends were going to develop at all.

This research was intended to explore the early developments in competitive retail electricity markets in order to get a perch on what might be expected from these markets as they mature. This paper presents an analysis of the period between the opening of the first competitive retail electricity markets in the U.S. and the time just two years later when the retail market in California began to fail. There is little public domain work in the U.S. on the subject of the costs and benefits to retail customers from participating in actual competitive electricity markets; the few retail market studies that do exist have been conducted on a proprietary basis.<sup>4</sup> It is believed that the data presented herein represent the first such collection of results in the public domain. In light of this dearth of information, this paper presents the results of a scoping study that was intended to evaluate competitive retail electricity markets, to compare the market in California with markets in other states, to

develop some preliminary data on customer experience and to provide a more detailed research agenda for future study.

### **Research Agenda**

This work was based primarily on the results of a series of interviews conducted with non-residential electricity service customers who chose to take service from a retail electric service provider (RESP) during the period beginning with the opening of competitive retail markets in 1998 and closing in the winter of 1999. The interviews explored customer attitudes towards and experiences with the process of purchasing electricity and, in some cases, value-added services in the newly competitive market. The commercial/industrial (C/I) sector<sup>5</sup> was selected for this research because of the proportion of total electricity-related expenditures in this sector, the sophistication and knowledge of the electricity buyers, and the exposure to value-added services of this segment. Moreover, in some states, residential choice lagged behind C/I choice, at least in part to allow state regulators to assess the effects of retail competition.<sup>6</sup>

The purpose of the research was to explore actual and potential costs and benefits of restructuring. Specifically of interest was the level of discount customers were receiving on basic commodity electricity service, the extent to which customers were demanding particular value-added services, whether any particular service “bundles”<sup>7</sup> were seen as desirable, which types of suppliers (i.e., utility, RESP, third party, etc.) were preferred for these services and the effects of retail competition on demand for value-added services in the market. Eight value-added services were defined in advance of the interviews based on a review of the literature and discussions with suppliers (see Table 1).

### **Methodology**

Preceding the initiation of this research, records were compiled of competitive activity prior to the opening of competitive markets as organizations in various states prepared for competition (Golove et al 1998). In addition, press releases and news reports of direct access deals across the United States were collected. From this information, a database containing information on more than one hundred and fifty retail contracts signed by organizations of various types and sizes from around the country was created. Potential respondents were drawn from this pool of “switchers” in order to obtain a sample that included customers of varying sizes and from diverse sectors and regions of the country for the interviews.

### **Caveats and Limitations**

While this paper provides insight into the interests and decision-making processes of C/I sector electricity service customers who have chosen to participate in direct access, the findings should be considered in light of certain biases and/or methodological limitations.

#### *Sample may not be representative*

It is likely that most or all of the customers interviewed should be considered “early adopters.” It is not clear, however, either that the interview sample was representative of the population of early adopters or that early adopters would be representative of the population of electricity customers as a whole.

The database of “switchers” was assembled primarily from press releases announcing new deals between RESPs and commercial, industrial and public sector customers. Typically, the press release was generated by the RESP and occasionally listed a contact at the customer site. This method of learning about retail electricity contracts limited the population to those companies that sought publicity for their actions. There is substantial evidence that many deals around the country were not announced, in part because customers chose to maintain as confidential any information about their energy services purchases.<sup>8</sup> Those that were announced by press releases almost certainly required the approval of the customer.

Thus, there has been no attempt to establish the statistical significance of the findings presented below. The research was intended as a “scoping study,” designed to suggest areas for further analysis.

#### *Sample size*

The relatively small sample of retail customers interviewed places an additional limitation on the ability to infer statistical significance from the study findings. Instead, results are presented as strong anecdotal evidence, rather than statistically significant findings.

### **Findings**

#### *Identification*

Telephone interviews were conducted between July and December 1999 with representatives from 73 direct access customers. Where possible, the person interviewed was directly responsible for negotiating with the RESP. Of the firms interviewed, 43% were located in California, 12% were located in Pennsylvania and 45% in other states. 23% of the firms were industrial customers, 61% were commercial firms and 15% were in the public sector. The respondents were identified with respect to basic characteristics relevant to their interest in electricity, such as the magnitude of their monthly electricity bill and the electricity intensity and economic sector of their operations.

The sample was divided into two segments: firms that signed competitive electricity contracts for their operations in California and those in all other states. This segmentation enabled a comparison of customer experience in California with that of customers in other competitive markets. In cases where there was little distinction between the reported experience of the two segments, data are presented for the sample as a whole.

Figure 1 shows that the majority of the respondents nationally had monthly electricity bills in excess of \$500,000. The California customers interviewed appear consistent with the overall sample except for an over-representation in the \$100K-\$1Million category and small under-representation in the higher categories. Although some of the interview subjects were not willing to disclose this information, the data that were provided suggest that the customers in this sample had aggregated annual electricity expenditures of over \$4 billion. For the majority of the respondents, electricity related expenses comprised between zero and five percent of their total operating expenditures. More than half of the organizations in the survey had annual revenues (or agency budgets when considering public organizations) in excess of \$1 billion.

#### *Transactions Costs*

Historically, purchasing electricity service from the local utility has been a very low cost activity. Even in the cases of the common value-added services, while not as simple to procure as commodity service, procurement was typically well-understood and the procurement costs themselves were relatively low. With the restructuring of the market, however, there was significant potential for the costs of procurement, primarily search and information costs, to increase substantially. Both customer experiences of procurement costs associated with their initial competitive purchases, as well as their expectations for the future were explored.

Figure 2 presents the types and distribution of procurement approaches that were taken by the respondents. Although the use of a public solicitation or Request for Proposals (RFP) is typically the most costly approach to procurement, it appears there were several reasons why this was the most common method. Because the competitive market was new, many customers were interested in learning as much as they could about the market before committing to a purchase. The use of an RFP facilitates the gathering of certain types of market intelligence. Some customers were unsure of what they wanted and were looking to

be guided by the proposals they received. Finally, many public sector customers are required by law or regulation to conduct an open competitive procurement process.

Figure 2 also suggests that in all states open to competition at the time, at least among these respondents, the market for retail electricity service was largely customer driven. The proportion of customers that were approached by RESPs in the sample is small and, in these cases, the number of RESPs they were approached by, is also small (see Figure 3). These data do suggest, however, that customers in California were substantially more proactive about initiating contact with RESPs and somewhat less likely to participate in aggregations than were customers in other states. Although the interview data did not provide any clear explanation of these findings, it is likely that, because suppliers were concentrating so much of their marketing efforts in California, customers felt it would be necessary to take a more proactive approach if they were eager to acquire a competitive supplier. In other words, although marketers were more active in California, customers appear to have believed it was necessary to make an effort to gain the attention of marketers facing such a large and wide-open market. There is no obvious explanation for the disparity in interest in aggregations. This may be an artifact of the small number of respondents in this category, but is worthy of further study to determine if, for example, market rules or some other factors explain this finding.

Figure 3 illustrates the substantial interest among suppliers in serving customers issuing solicitations – customers across the country typically received at least three responses to their solicitations. It also supports the contention above that active customers were likely to receive attention from retail marketers. Because these markets did not continue functioning actively, it is not possible to determine whether these levels of interest among suppliers would have been maintained as markets matured.

Table 2 shows the period of time it took for customers to procure new retail electricity services and whether they expected the process to become easier in the future. Over the course of the procurement period (measured as the time between initiating the direct access process to signing a contract with an RESP), the average firm in this sample invested over 700 person hours in finding the right deal. Over 60% of the customers surveyed required five months or longer to switch service providers. It is noteworthy that almost 80% of customers in California experienced procurements lasting at least five months, while less than 50% of all others had the same experience. This is almost certainly attributable to the complexity of the market rules in California at the time. At the same time, many customers felt this represented an investment in learning the procurement process and that future service procurement would be easier. Indeed, well over 50% of respondents expected future procurements to be substantially easier.

Despite the high learning costs associated with a first purchase, 64% of the total sample of respondents said they would reissue an RFP or bid out for services for future contracts. Only 28% said they would, with certainty, renew their current contract when it expires with a slightly higher percentage suggesting they would give their supplier some form of “right of first refusal.” About 7% had no idea what they would do.

Anticipated regulatory uncertainty contributed to customers' sense of both the potential future benefits as well as costs of future procurements. While Paul Parshley, director of Cambridge Energy Research Associates' power team, commented that “The trend towards natural gas and electric choice is changing from a halting stop-and-go process to ‘forward, march’ (CERA 1999),” several of the customers interviewed were concerned that their “forward, march” might be tripped up by ongoing regulatory change. One respondent in California noted, “Next time there will be different market conditions; a different set of rules from the ISO will mean next time it will be as if we were starting all over again.” Of course, it is apparent now these concerns were entirely justified as the pace of restructuring and

market development has slowed considerably throughout the country, while the rules governing the structures of both the wholesale and retail markets in California have been completely re-designed.

#### *Sources of Value*

To better understand the sources of value perceived by customers when switching from their utility, respondents were asked about the magnitude of savings on the commodity service. In addition, customers were asked to estimate the relative value of commodity cost savings versus those benefits expected from value-added services. Current and future interests in value-added services were also explored in order to gain a better understanding of the potential sources of value to customers in restructured electricity markets.

The interviews also explored customer preferences with respect to an “a la carte” versus bundled service packages approach to the procurement of services. Customers were asked to express their preferences with respect to the suppliers of various value-added services in order to explore their attitudes about integrated service provision and to explore which services are more likely to be procured from the commodity provider versus those that are more likely to be purchased separately.

One approach to determining sources of value was to ask customers about the criteria they used in selecting their RESP (see Table 3). Not surprisingly, price was ranked as the most important factor by customers in all segments included in this sample. However, while public organizations in other states were unanimous in ranking price as the most important consideration, public organizations in California ranked price no higher than four other criteria. While differing state procurement process restrictions and requirements may be responsible, it would be worthy of future research to determine the origins of this disparity. More surprising in light of the low level of importance ascribed to the range and price of value-added services was the importance customers placed on the willingness of the supplier to respond to non-price needs. The low ranking given to the recommendation of others is likely to be the result of the limited experience any customer could have had in the market, but would be expected to increase over time. The very low rankings accorded to the location of the supplier appear contrary to comments made in the media (during the so-called “crisis” period in California) about out of state firms profiting from developments in the wholesale market. These rankings probably reflected greater customer concerns about value to their individual firms than about possible impacts of out-going revenues on their local economies.<sup>9</sup>

The most obvious source of benefits to direct access customers came from reductions in the price of commodity electricity service. About 70% of the customers from California generally expected savings in the 1-5% range from the contracts they had signed,<sup>10</sup> whereas customers from Pennsylvania and other restructured states expected greater savings, with 80% of Pennsylvania customers expecting savings in excess of 10% (Figure 4).<sup>11</sup>

The differences between California and other states with respect to expected commodity discounts likely result from several factors, including resource endowments, current electricity assets, and, importantly, market rules. Although it is not possible to point to a document that articulates the key principles underlying the market design intentions in California, extensive discussions with regulators, legislative aides and other market design participants reveal that the creation of an immediately efficient wholesale market structure was the highest objective.

By contrast, Pennsylvania, for example, attempted to create a competitive retail market, believing that, over time competitive pressures would result in the development of an efficient market as well. Pennsylvania legislators and regulators were willing to distort the initial efficiency of the wholesale market by authorizing less than 100% stranded asset recovery and by allocating a disproportionate share of stranded asset recovery to retail customers choosing to remain with their monopoly utility. This enabled Pennsylvania to

offer “the largest shopping credit set by any state to date (Hanger 1998).” P. Gregory Conlon, one of the commissioners on the California Public Utilities Commission (CPUC) at the time restructuring was being developed, noted in an interview about six months after the competitive market opened in California, that, “I think Pennsylvania did an interesting thing. They created an incentive for the customers to switch... in essence they used the utility stockholders as whipping boys to provide incentive...”.<sup>12</sup> The point here is not to offer a normative judgment on the two approaches, but rather to highlight the importance of market rules in creating benefits in competitive retail markets.

Although it could not have been anticipated at the time, in retrospect it is apparent in light of the substantial increases in retail prices (IOU tariffs) avoided, that California customers who received a fixed commodity price (see Table 4) are likely to have found the greatest source of value from this form of pricing.<sup>13</sup> This would have been particularly true for customers in San Diego that might otherwise have been faced with spot market prices. The significance of this finding should not be overlooked; the substantial majority of customers approached the competitive procurement process with the belief that a discount (in the form of a percentage reduction vis-à-vis their applicable utility tariff) was the quickest and most effective route to financial savings. In hindsight it is clear that the hedging benefits provided by fixed price contracts were enormous for a potentially non-trivial minority of direct access customers in California. While customers in other states accepted fixed priced contracts more than three times as frequently as those in California, the benefits were certainly much less because of lower market prices and less price volatility (see Table 4).

Discussions with customers suggested that, generally and all else equal, those that needed to demonstrate clear price comparability (between prices available under utility tariffs and prices acquired through competitive solicitations) strongly favored prices indexed to utility tariffs, those end-users that believed they had significant demand response potential favored more real-time pricing, while those customers that anticipated significant energy efficiency opportunities preferred flat rate pricing. Understanding both the motivations for selecting forms of pricing and the reasons for the difference in selection rates, as well as assessing the ultimate value to customers from different pricing formats should be the subject of further research.

Despite the fact that energy efficiency and other value-added services can often save customers between 10% and 30% on electricity expenses, according to the data developed by these interviews, customers continued to believe that the main benefits from direct access were derived from savings on the electricity commodity. This was true regardless of share of total expenses spent on electricity (Figures 5A&B). A number of the interview subjects, while aware that there would be benefits to their organizations from value-added services, felt the salespeople representing the various services had not done enough to quantify those benefits for them. Thus, customers expressed being left with significant uncertainty about how to compare the relative benefits of seeking to lower their commodity rates versus, for example, improving the energy efficiency of their operations.

The primary differences between the perceptions of value of customers in California and other states provided by commodity discounts versus value-added services seems to be that customers in less energy intensive industries located outside California found even less value in value-added services than did their counterparts in California. Since electricity rates in California were among the highest in the country and given that the value of energy efficiency services declines as electricity rates are reduced, this finding is consistent with expectations. On the other hand, given that a firm’s electricity rate tends to be inversely proportional to the energy intensity of the firm’s activities and that, all else equal, commodity discounts would be inversely proportional to electricity rates, it is surprising that customers in energy intensive industries did not anticipate significantly greater benefits from value-added



services than did their less energy intensive brethren. Part of the explanation for this appears to be that energy intensive firms have already made significant investments in energy efficiency and other value-added services and may have believed there was less incremental opportunity for additional cost-effective investment.

Figures 6A&B reveal some findings that were consistent with expectations, one finding that was quite unexpected and several issues that deserve further research. With respect to innovative billing and energy information services, prior to the time of these interviews, there had been substantial marketing of these services and, while the exact economic value of these services was difficult to assess, high levels of interest were anticipated by marketers. It was also expected that interest in these services in California would be higher than elsewhere as a result of the potential for competitive provision of billing and metering.

One of the more unexpected results of the entire project was that energy efficiency was seen as a highly desirable service by only a relatively small number of customers in California. Because this result is clearly inconsistent with prevailing thought among industry professionals, it requires further investigation. In evaluating the interest in enhanced power quality and reliability, it was anticipated that interest would be higher in states other than California.<sup>14</sup> It would be useful to explore this issue further in light of subsequent reliability problems that emerged in California after these interviews were completed.

Many of the customers interviewed chose to purchase value-added services from a supplier other than their RESP (see Figure 7).<sup>15</sup> This was particularly true in the case of energy efficiency, distributed generation, facilities management, and energy system management. Some customers commented that buying these services from the electricity provider was akin to “letting the fox guard the hen house.”

It was also found that customers were willing to accept options for a variety of services, even in cases where they had no intention of exercising those options. This may have been the case because there was little cost to the customer in accepting options and, further, that customers may have believed that it would provide some negotiating leverage in cases where it is important to the supplier to include it in the contract. Suppliers, on the other hand, appeared to believe that these options provide a low-cost competitive advantage vis-à-vis other suppliers should their customer become interested in these additional services.

Another of the most interesting findings is in the area of customer preferences for supplier types for specific services in the future (see Figures 8A&B). No matter how the data are parsed, the results suggest that the market leaders are not firmly established – “No Preference” received 50-60% ratings for all services regardless of the location or economic sector of the customer. The respondents did, however, appear to favor somewhat the RESP for billing, energy information and green power and third party providers for energy efficiency, facility management and energy outsourcing. The differences in preferences between customers in and out of California in the areas of billing and energy information were almost certainly attributable, at least in part, to differences between the market rules governing the provision of these services. In the area of power quality and reliability, as discussed earlier, the higher degree of preference for utility provision of these services in California was likely the result of more problems in these areas outside of California. If this question were asked now, it is quite probable the regard for utilities in this service area in California would have eroded.

Overall, utilities appear to have been somewhat better regarded in California than elsewhere. The ambivalence of customers about their choice of future suppliers for energy efficiency services suggests there will continue to be markets both for integrated (with commodity) and independent (from commodity) provision of this service.

*Incremental Demand*

One traditional measure of the success of a particular market or sector is growth in the provision of services within that sector. Certainly there has been hope on the part of many value-added service providers that the introduction of competition would prove a boon to their industries and their specific firms. One such line of reasoning has been that once a market price for electricity has been established, the providers of services such as information provision, energy efficiency, demand response and distributed generation would be able to articulate the benefits of their services more clearly to potential customers.

A series of questions included in the interviews were intended to explore the early evidence about the impact of restructuring on the demand for value-added services. Despite the importance of this question, establishing meaningful metrics and relevant baselines for comparison was not a straightforward task. Further, the data collected in these interviews were not sufficient to make strong claims about the question of whether direct access had an incremental (or decremental) effect on customer interest in value-added services. Nonetheless, it was possible to compare past and present interest in these services with customers' expressions of future interest in these services.

Figures 9A&B suggests that it was unlikely that there would be a significant incremental future interest in most value-added services (with the exception of innovative billing) as a result of direct access, at least in the short-run. In fact, fewer customers report high future interest in most value-added services than have participated in these services in the past. This lack of high future interest relative to past participation may have been the result, in part, of poor experiences with these services in the past, but may also reflect (unrealistic) expectations about the future of commodity prices and the lack of time since the opening of competitive markets for the development of (likely) potential innovations.

#### *Other Key Findings*

##### **Monopoly utilities as quasi-competitive entities**

The (threat of the) introduction of competition into retail electricity markets likely caused some incumbent utilities to utilize competitive strategies to retain customers. Some of these strategies amount to last ditch efforts to retain customers, including deep price discounts on power or ancillary services. Electricity restructuring may have improved the price and/or services offered to that customer, but these experiences were not captured in this research.

##### **Conflation of market rules and customer preferences**

These interviews did not provide data adequate to disentangle customer preferences from the effects of market rules. For example, while most states do not yet have competitive markets for billing services, informal evidence suggests there would be significant interest in selecting a non-utility provider of this service. In addition, switching rates, i.e., the rate at which customers of monopoly utilities elect to receive service from a competitive supplier, and commodity savings available from switching, are significantly determined by default service rates or so-called "shopping credits." Future efforts to describe more fully the relationship between market rules and customer preferences will be key to creating markets that can offer high value to participants.

## **CONCLUSION**

The findings presented in this paper indicate that direct access customers in functioning markets can reasonably expect to save a modest amount from the competitive procurement of electricity service, although the amount of the savings appears to be significantly dependent on market rules, among other factors.<sup>16</sup> Short run savings on the electricity commodity may be enhanced by providing a large "shopping credit" or default service price, but this may come at the expense of cross-subsidies across customer classes or in reductions in the overall

economic efficiency of the market. Much research and analysis remains to be done in these areas.

By comparison, energy efficiency and other value-added services are believed in some circles to offer much larger savings than those available through commodity discounts. Yet the customers interviewed here routinely believed that savings from direct access would come much more from the commodity purchase than from value-added services. This finding suggests that the marketers of value-added services may be doing an inadequate job of communicating to customers the worth of their services.

These interviews further suggest that while there is significant interest in value-added services (despite the uncertainty about their benefits), it is not clear at this point that the introduction of competition in the electricity market stimulates demand for these services. The data presented here also revealed that there was limited interest in service bundles. Many of the customers interviewed were concerned about conflicts of interests on the part of commodity suppliers that also offer a range of value-added services. Nevertheless, there do appear to be potential markets for the integrated provision of certain value-added services, especially in those cases where the supplier can demonstrate that the additional value and reduced costs associated with procuring a range of services from a single supplier, outweigh the risks of this approach. In addition, it is apparent that no single type of supplier had established a position of market leadership. Finally, in spite of the finding that procurement costs were often high, the savings associated with competition low and the benefits of value-added services, modest, there was overwhelming support for electricity restructuring.

Another important area for additional research is on the question of “unbundling” of services. Legislators and regulators across the country have taken very different approaches to allowing competitive provision of certain services, such as billing and metering and these differences may have significant effects on the benefits to customers for those services.

At the time of these observations, it was apparent that competitive markets for electricity service and value-added services were immature. The large savings that many customers expected had not materialized and the hoped for benefits had not fully emerged. Based on the experience of those states that initially introduced competition into their retail electricity markets, it will be important to continue monitoring customer experiences and satisfaction with retail competition (in those states where markets remain open or where new markets open subsequent to this research) as one important indicator of both the value, as well as ultimate success, of electricity restructuring.

The collapse of the competitive market in California threatens the near term viability of electricity restructuring across the country. But before the baby is thrown out with the bathwater, it should be recognized that there may be real, although perhaps modest, benefits to retail competition – assuming viable competitive wholesale markets can be developed and that the linkages between the wholesale and retail markets are well-designed. Whether the potential benefits outweigh the risk of market failure is for state and federal legislators to determine.

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## TABLES

**Table 1: Definition of Terminology**

<b>Innovative Billing Services</b>	Consolidated billing (i.e., bill from supplier that summarizes electricity usage and cost at multiple sites and accounts); customized bills (e.g., billing for electricity, gas & water; aggregation of bills from multiple utilities).
<b>Energy Information Services</b>	Information on hourly energy use, comparison and benchmarking of facility energy use, tariff and rate studies, opportunities for peak load demand management.
<b>Energy Efficiency Services</b>	Design and installation of high-efficiency equipment, control systems, or lighting retrofits, energy audits and feasibility studies.
<b>Green Power Services</b>	Provision of electricity services from renewable, environmentally preferable generation resources.
<b>Distributed Generation</b>	On-site generation, co-generation, fuel cells, micro-turbines, PV systems.
<b>Enhanced Power Quality or Reliability</b>	Power factor correction, voltage regulation, backup support offered by uninterruptible power supply (UPS) equipment, backup generation or multiple feeds.
<b>Facilities Management Services</b>	Maintenance, diagnostics, or emergency repair of major energy systems (e.g., cogeneration and steam, hot and chilled water distribution) or electrical distribution systems (e.g., substations, transformers, switch-gear equipment).
<b>Outsourcing of Energy System Management</b>	Take over management and operation of major energy systems, end use pricing (e.g., steam, chilled water, & compressed air systems), purchase and leaseback of central thermal and power plants, total energy management.

**Table 2: Procurement Time and Future Ease of Selection**

Procurement Time				Future Ease of Selection		
	CA	Other			CA	Other
# of Months	% of Sample			Future Ease	% of Sample	
<3	12.8%	27.3%		1 (Not Easier)	5.1%	9.4%
3 - 4	7.7%	24.2%	2	7.7%	0.0%	
5 - 6	25.6%	33.3%	3	30.8%	31.3%	
7 - 12	35.9%	3.0%	4	48.7%	46.9%	
13 - 18	12.8%	6.1%	5 (Much Easier)	7.7%	12.5%	
>18	5.1%	6.1%				

**Table 3: Mean Values of Customer Criteria Selection of Supplier (1=Lowest, 5=Highest)**

	Commercial		Industrial		Public	
	CA	Other	CA	Other	CA	Other
<b>Selection Criteria</b>						
The price of basic electricity service	4.58	4.65	4.63	4.63	3.60	5.00
The supplier is a local company	2.12	2.35	2.13	2.38	2.20	1.80
Recommendation of others	2.77	2.10	2.63	2.38	2.60	2.00
Experience and technical expertise of the supplier	3.85	4.10	4.25	4.38	3.60	2.60
The range and price of value-added products and services offered	2.88	2.70	3.38	2.38	3.20	2.75
Willingness of the supplier to respond to your needs (not including price)	4.15	4.20	4.00	4.00	3.60	3.20
For customers with multiple accounts, the willingness of the supplier to cover all meters	4.28	4.42	4.43	3.00	3.60	2.80
<b>Number of Respondents</b>	26	20	8	8	5	5

**Table 4: Electricity Service Pricing Format**

<b>How Was Electricity Service Priced?</b>				
	<b>Respondents</b>			
	<b>CA</b>		<b>Other</b>	
	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>
Discount off utility tariff	22	59%	10	31%
Discount off another price index	4	11%	2	6%
Fixed price	6	16%	17	53%
Other	5	14%	3	9%
<b>Total</b>	<b>37</b>	<b>100%</b>	<b>32</b>	<b>100%</b>

**ILLUSTRATIONS AND CAPTIONS****Figure 1: Monthly Electricity Bills****Figure 2: RESP Selection Method****Figure 3: RESP Selection Method and Number of Responses****Figure 4: Electricity Commodity Savings****Figure 5A: Relative Benefits in California****Figure 5B: Relative Benefits in Other States****Figure 6A: Customer Perception of Desirable Services in California****Figure 6B: Customer Perception of Desirable Services in Other States****Figure 7: Customers' Current Choice of Suppliers****Figure 8A: Customer Preferences of Suppliers for Future Purchases in California****Figure 8B: Customer Preferences of Suppliers for Future Purchases in Other States****Figure 9A: Incremental Demand for Services in California****Figure 9B: Incremental Demand for Services in Other States**

Figure 1: Monthly Electricity Bills

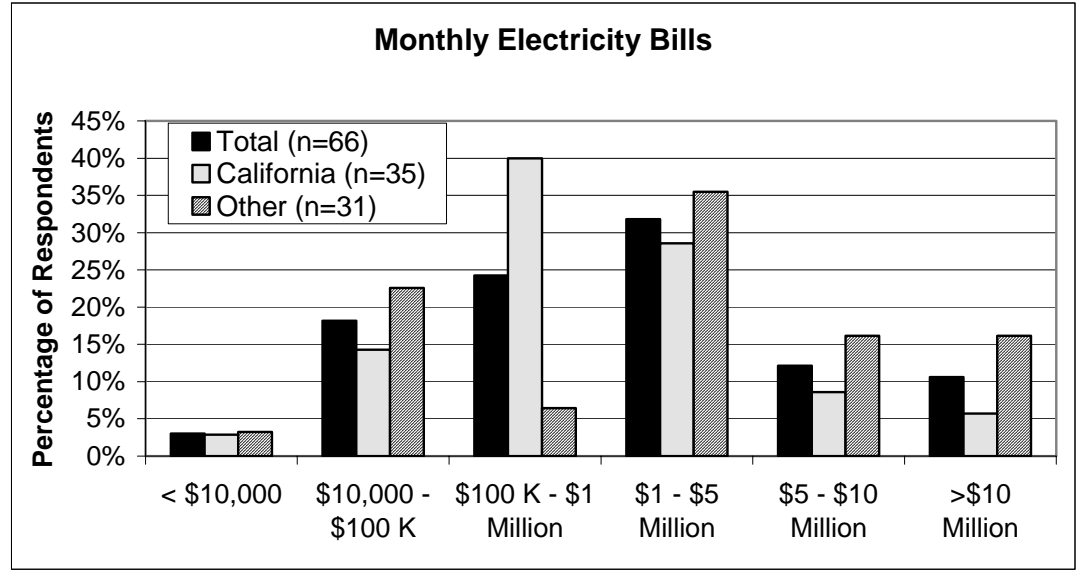




Figure 2: RESP Selection Method

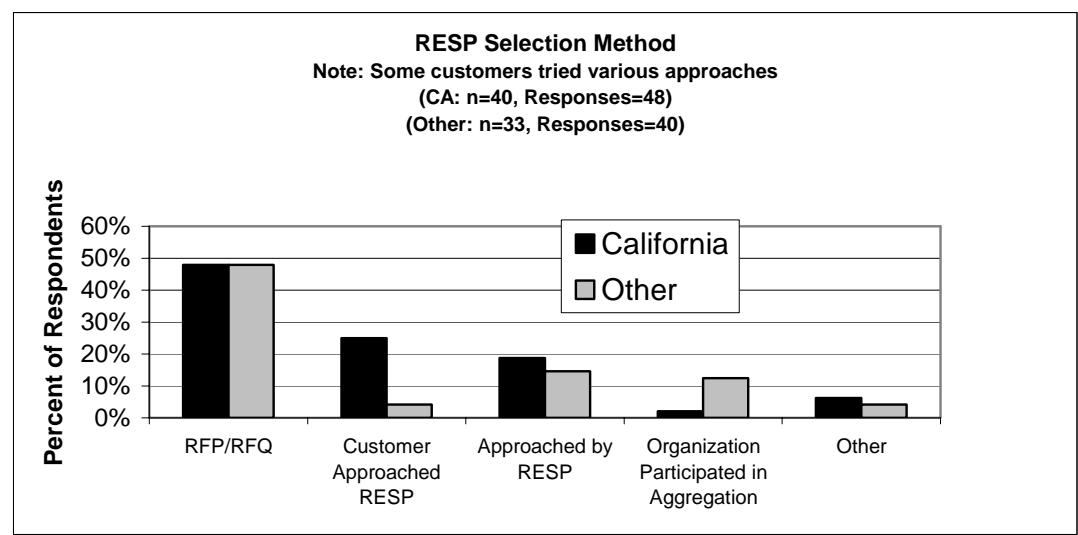


Figure 3: RESP Selection Method and Number of Responses

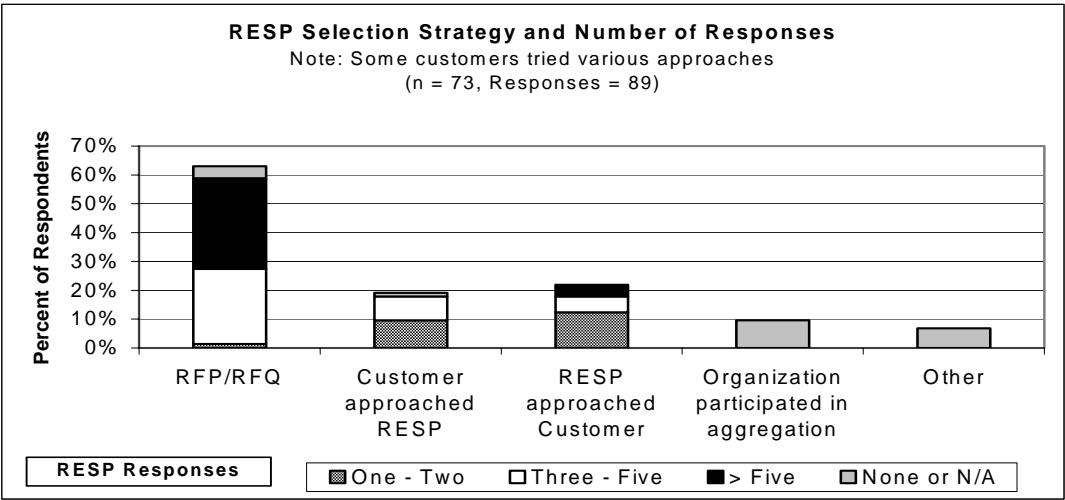


Figure 4: Electricity Commodity Savings

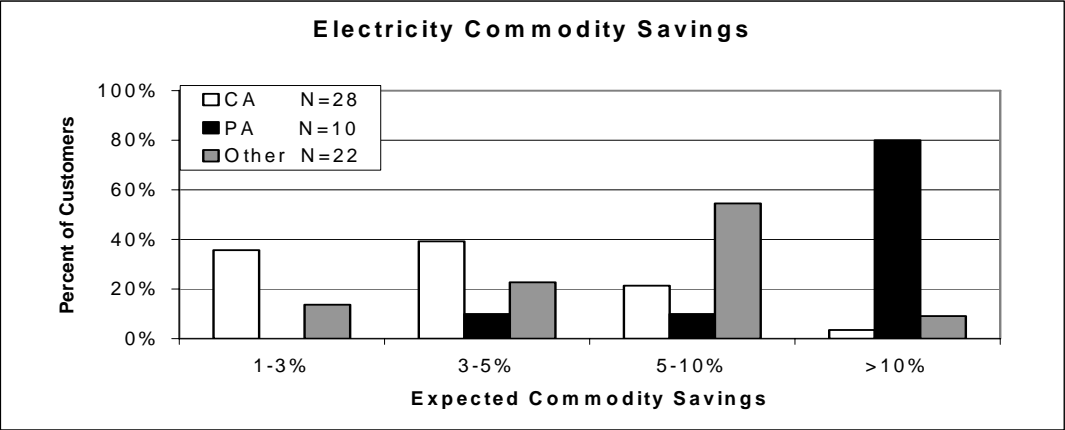


Figure 5A: Relative Benefits in California

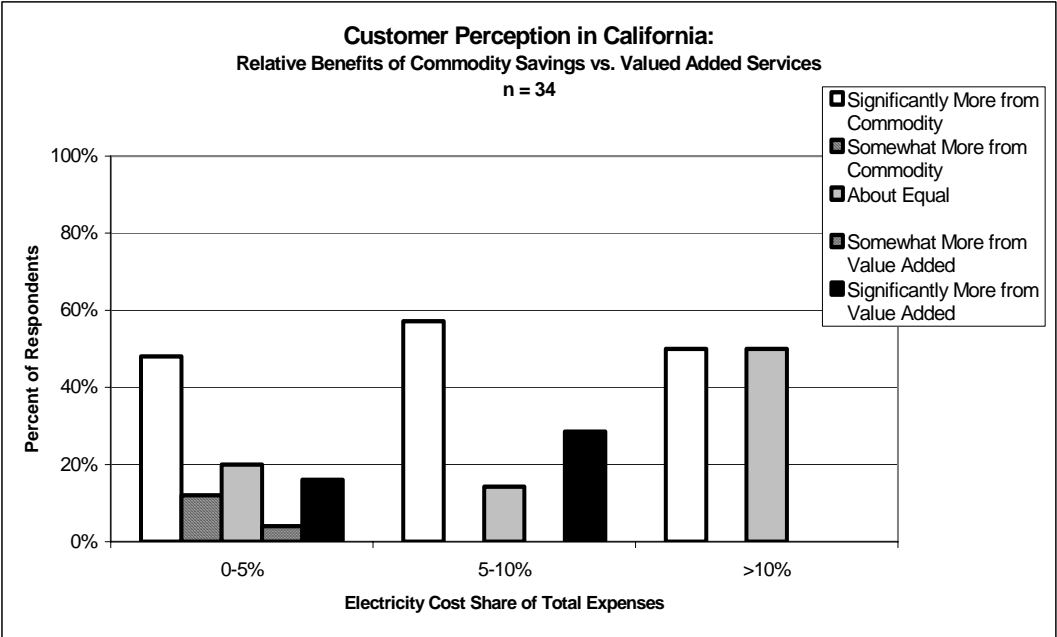
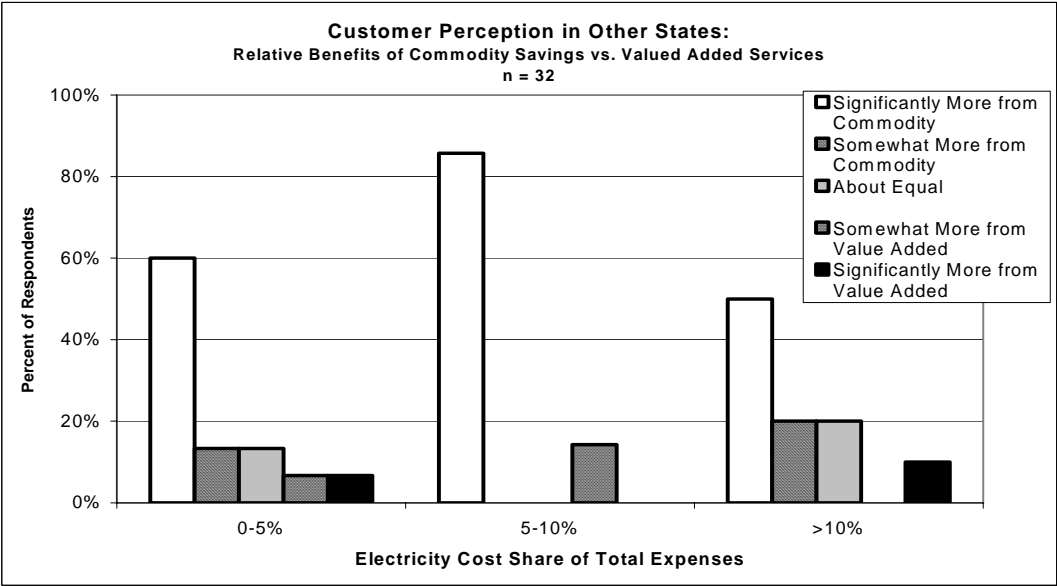
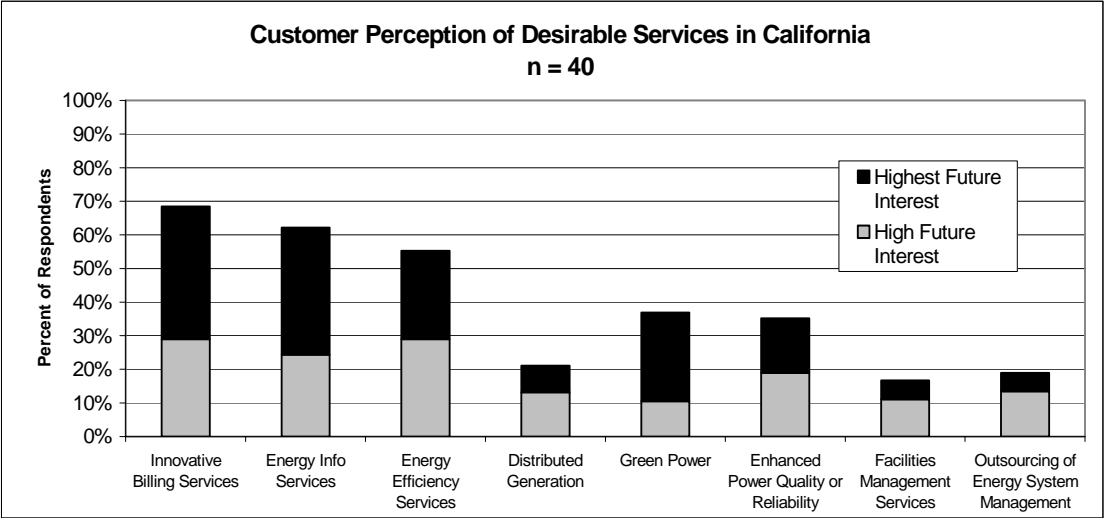


Figure 5B: Relative Benefits in Other States



**Figure 6A: Customer Perception of Desirable Services in California**



**Figure 6B: Customer Perception of Desirable Services in Other States**

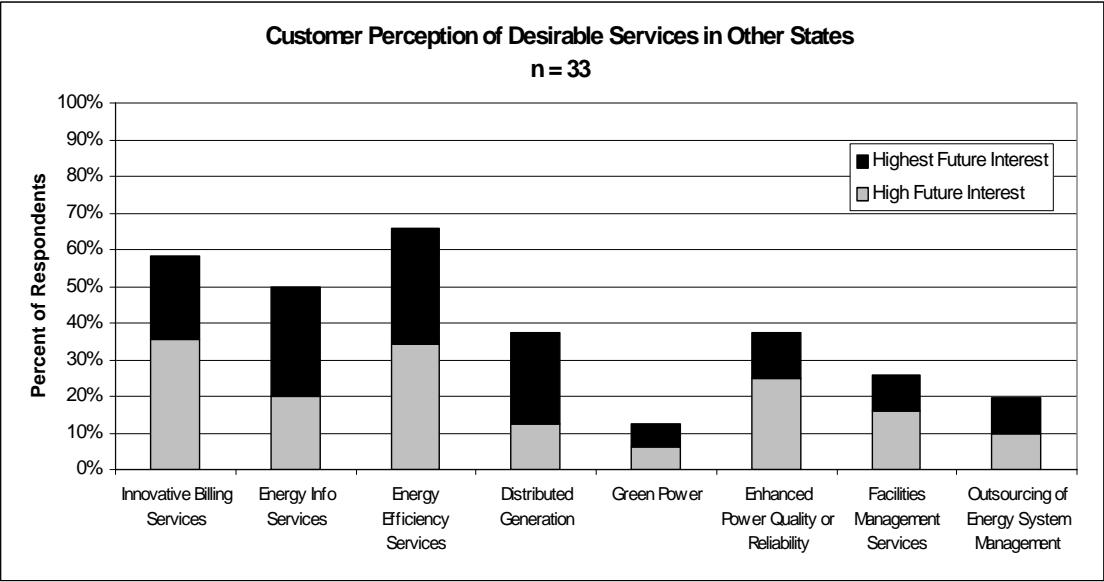
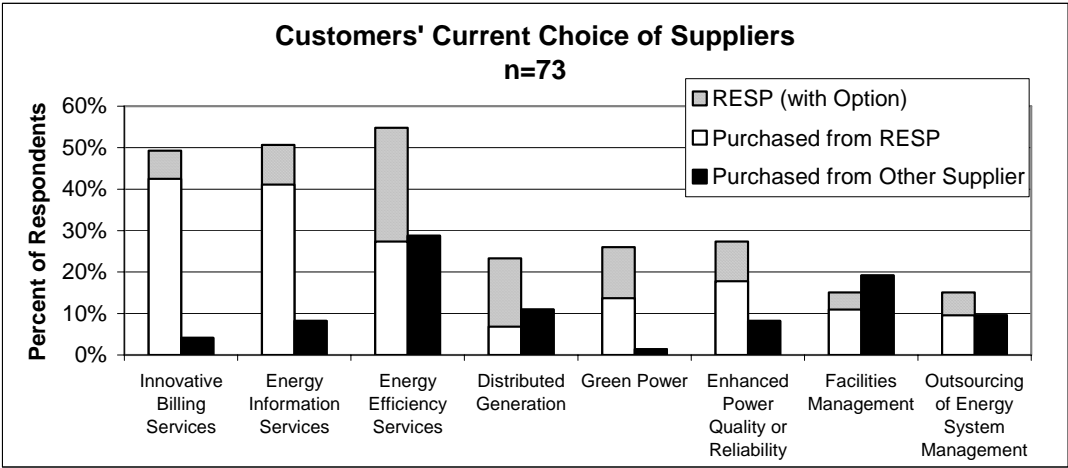
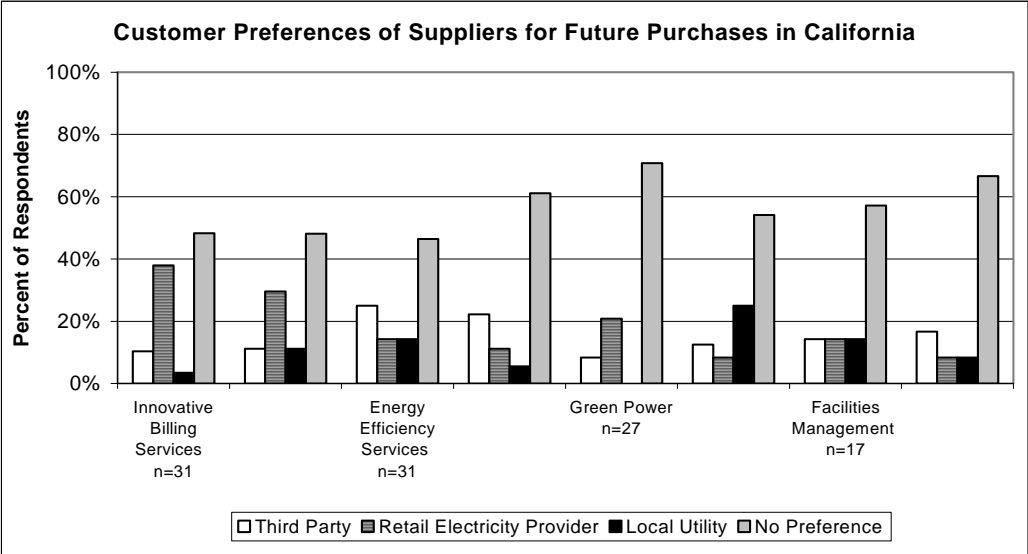


Figure 7: Customers' Current Choice of Suppliers





**Figure 8A: Customer Preferences of Suppliers for Future Purchases in California**



**Figure 8B: Customer Preferences of Suppliers for Future Purchases in Other States**

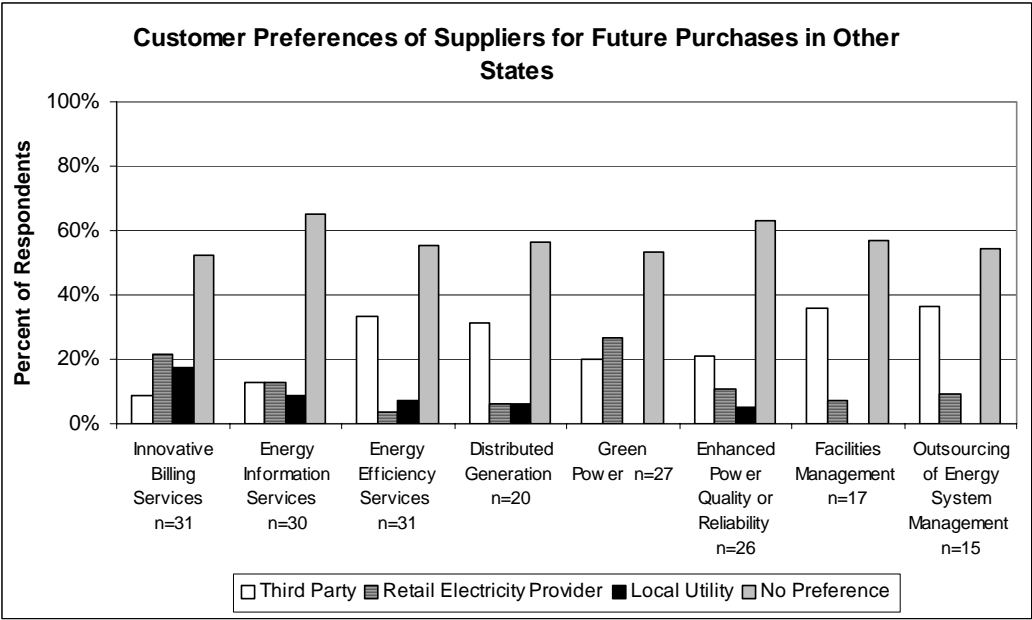


Figure 9A: Incremental Demand for Services in California

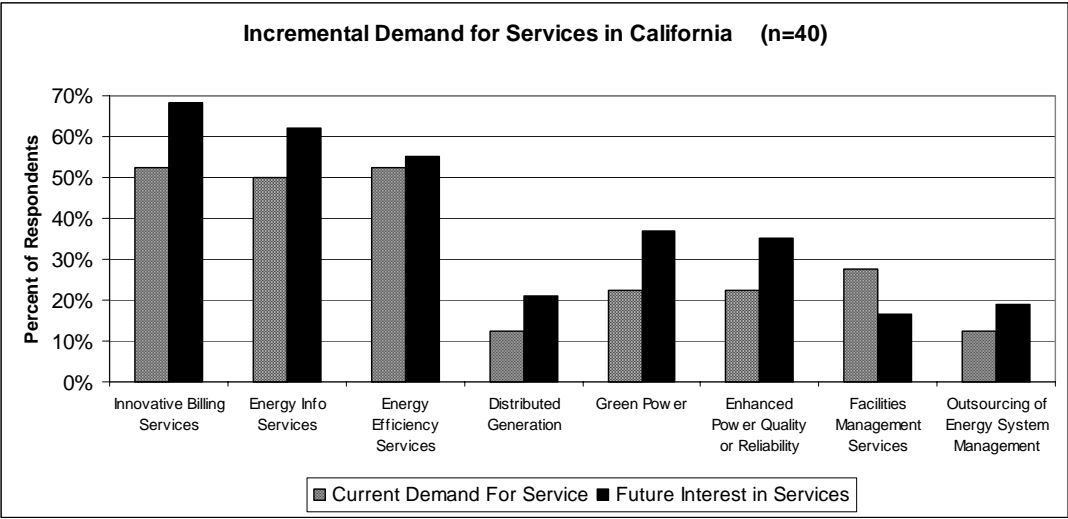
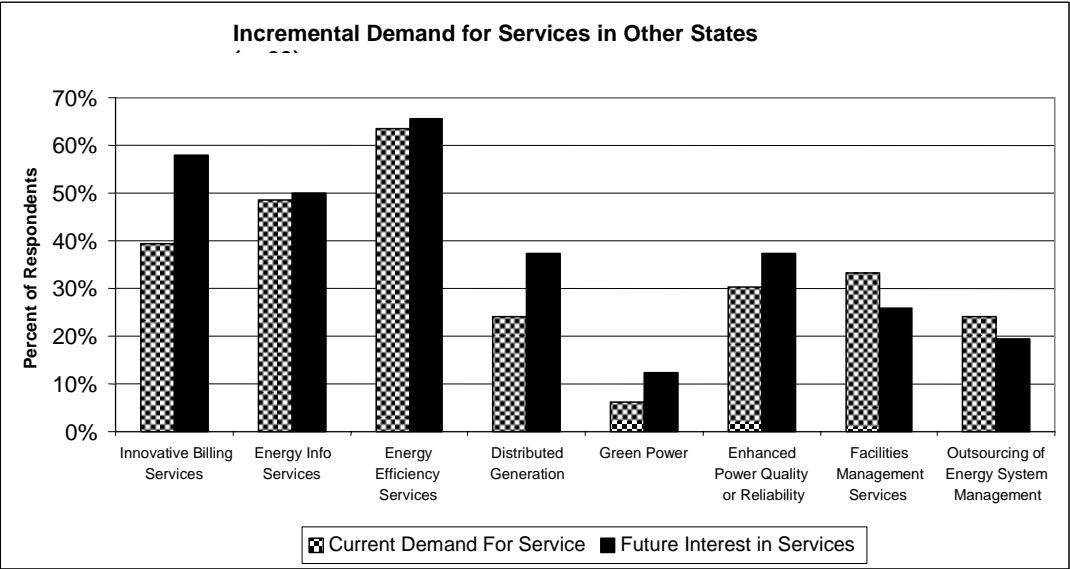


Figure 9B: Incremental Demand for Services in Other States



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## FOOTNOTES

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<sup>1</sup> An analysis of the June 2000 price spikes in the California market, published by the Market Surveillance Committee of the California Independent System Operator in September 2000 argued that wholesale market prices were already well above perfectly competitive prices in May and June 2000 (Wolak et al 2000). However, the structure of retail prices whereby the total retail rates were capped and the competitive transition charge (CTC) was calculated as a residual, may have mitigated the impact on retail activity.

<sup>2</sup> The terms “restructuring” and “deregulation” are frequently used interchangeably, particularly in the popular press, but often in academic and trade publications, as well. While there are important differences, both substantively, as well as in terms of the political impact of the terms, for purposes of this paper, the term “restructuring” will be used to reflect the author’s opinion that it is a more technically accurate term in this case.

<sup>3</sup> Smith 1999.

<sup>4</sup> For an example of the type of proprietary work that has been done, see, XENERGY, Inc. (1999) ‘Retail Energy Markets ’99’. On the public domain side, one very cursory study (Sioshani 2000) found the industrial and large commercial market to be “lively,” while the small commercial and residential market was “positively comatose.” A report, *Electric Industry Restructuring: Realized and Prospective Benefits to Customers in SDG&E’s Service Territory*, released by the San Diego County Taxpayers Association in June 2000 found that small commercial customers in the San Diego Gas and Electric territory had saved \$56 million since the opening of the competitive market. It is also worth noting, however, that by August 3, 2000 State Senator Dee Dee Albert from the San Diego area was testifying at the CPUC that “The promise (of restructuring) is not true. The dream has turned into a nightmare for San Diego residents.”

<sup>5</sup> For purposes of this research, the public sector was included in C/I.

<sup>6</sup> The notable exceptions were California, Massachusetts and Pennsylvania where residential consumers enjoyed immediate access to retail electricity service providers.

<sup>7</sup> Historically, utilities have provided as a single indivisible service a set of services that, under restructuring, in some states, were “unbundled,” i.e., separated and de-linked from one another (e.g., electricity commodity provision, billing and metering, etc.).

<sup>8</sup> For example, the California Public Utilities Commission maintained public records of aggregated customer “switching” in the state. Press releases acquired for this research described only a fraction of total load switched to non-utility service providers.

<sup>9</sup> It is also quite likely that comments emphasizing concerns about the role of out-of-state firms in exacerbating/capitalizing on the crisis were more strategic than substantive. It may also be true that customers were less concerned about cash flows out of the state when the magnitude of those flows was lower.

<sup>10</sup> In an article entitled “Happy Birthday (or Maybe Not)” from the Energy Central – Deregulation Weekly Update of 4/7/99 by Paulette Whitcomb, the then-president of the California Retailers Association is quoted as saying that retailers in his organization have seen 7% to 12% savings – “the best savings of any group” in the state. These claims could not be confirmed by this research.

<sup>11</sup> The disparity between anticipated savings among customers in the two states is probably the key reason for the more rapid switching to RESPs in Pennsylvania than was experienced in California. See, for example, Xenergy’s *Retail Energy Foresight*, August/September 2000.

<sup>12</sup> Schuler 1998, p. 30.

<sup>13</sup> Many RESPs in California unilaterally terminated service with their direct access retail customers as the crisis in the wholesale market persisted. It is likely that customers who prices were not hedged to the wholesale market would have been among the first to be returned to utility default service by their suppliers, although some may have had contracts that made such actions difficult.

<sup>14</sup> Blackouts and other reliability problems have historically been more frequent and of greater duration and magnitude in the Eastern U.S. and Midwest than in California which had not yet begun to experience an unprecedented period of reliability problems after this research was already completed.

<sup>15</sup> The data in Figure 7 are not disaggregated by state because there were no important differences between California and other states that were revealed.

<sup>16</sup> Whether it is possible to create competitive electricity markets capable of functioning efficiently in the mid- to long-term is a separate question and is not considered here.